



## Air Quality Assessment at Archer Drive, Sheffield

### Background

Miller Goodall was appointed to complete an air quality assessment in relation to a commercial development within the Archer Road Retail Park, approximately 3 miles from the centre of Sheffield. The client wished to submit an outline planning application for the erection of a new three-storey unit configured as follows:

- Gym – 1860 sqm at 1<sup>st</sup> and 2<sup>nd</sup> floors
- Retail – 5 units totalling 686 sqm
- Café – 1 unit totalling 149 sqm

Planning permission in relation to alteration to a nearby retail store had previously been refused, in part due to the impact of the development on air quality.

### Action Taken

Detailed dispersion modelling using ADMS-Roads was undertaken to provide a review of existing air quality in proximity to the proposed development site and assess the potential local air quality impacts associated with traffic generated by the development at existing residential receptors. In order to populate the model, data was collected in relation to baseline air quality conditions at the site, meteorological conditions and traffic flow associated with the development. Current UK guidance was used to provide criteria for magnitude of change and related significance of quantified impacts as a result of a development.

An important factor in the assessment was the verification of the baseline model against existing monitoring information. Model verification is the process of adjusting model outputs to improve the consistency of modelling results with respect to available monitored data. There were several nitrogen dioxide (NO<sub>2</sub>) diffusion tubes within the study area, a number of which indicated exceedences of the annual objective for NO<sub>2</sub>. Figure 1 shows an example of a diffusion tube within the study area. In this case, a site visit was undertaken to ensure that the characteristics (e.g. height) of each tube were correctly modelled.

Figure 1 Nitrogen dioxide diffusion tube



### Summary of Findings

Vehicle exhaust emissions from traffic generated by the proposed development in the year of opening were predicted to have negligible impact on local air quality at the majority of identified sensitive receptor locations in proximity to the road network. Planning permission was subsequently granted for the development, subject to conditions.

For more information about us, visit our website at

[www.millergoodall.co.uk](http://www.millergoodall.co.uk). If you would like to discuss how we can help your project, please contact Miller Goodall on 01204 596166 or email [info@millergoodall.co.uk](mailto:info@millergoodall.co.uk).